Student Handout

Name:_____

Challenging the Immune System: Summary Table

Directions: Meet in jigsaw teaching groups and teach your group about the disorder researched while working through your case study. Be sure to fill out this summary table when the other members are teaching you about each disorder. Your teacher may collect this as a formal assessment of your understanding.

Disorder:	**HIV/AIDS**	**Leukemia**	**Lymphoma**	
Symptoms				
Causes (Genetic— mutation or malfunction; Environmental – bacteria, virus, or other pathogen)				
Diagnosis				

Disorder:	HIV/AIDS	Leukemia	Lymphoma	
Cells involved				
Types/variations of the disorder				
Treatment options				

Teacher Handout with Answers

Name:_____

Challenging the Immune System: Summary Table

Most answers will include variation depending on the type of research and sources students used.

Disorder:	**HIV/AIDS**	**Leukemia**	**Lymphoma**	
Symptoms	Rapid weight loss, dry cough, recurring fever, profuse night sweats, profound and unexplained fatigue, swollen lymph glands in the armpits, groin, or neck, diarrhea that lasts for more than a week, white spots/unusual blemishes on the tongue, mouth, or throat, pneumonia, red, brown, pink, or purplish blotches on or under the skin, memory loss, depression, and other neurological disorders	Weakness , feeling tired , weight loss , fever, night sweats, enlarged lymph nodes (felt as lumps under the skin) , pain or a sense of "fullness" in the belly, excess bruising, bleeding, frequent or severe nosebleeds, and bleeding gums.	Sometimes no symptoms besides lumps under or near skin and cough or trouble breathing. Other symptoms include: night sweats, weight loss, fever, itching, tiredness, and poor appetite. Symptoms depend on location in body; there may be swollen tender areas or personality changes if in brain.	Sickle blood get ca block vessel dama It also kidne the sp overw infect
Causes (genetic vs. environmental)	*HIV (*human immunodeficiency virus). This is the lentivirus that causes *AIDS* (Acquired Immunodeficiency Syndrome). HIV attacks the immune system. It finds and kills a type of white blood cell (T cells or CD4 cells) that the immune system needs to fight disease.HIV is transmitted 3 ways: • Having vaginal or anal sex with someone infected with HIV • Through blood: sharing needles/syringes with someone infected, receiving infected blood transfusion • Being exposed (fetus or infant) to HIV before or during birth or through breast feeding	No single known cause for all of the different types of leukemia. Being a cancer, it results from somatic mutations in the DNA which disrupts the regulation of cell death, differentiation or division. These mutations may occur spontaneously or as a result of exposure to radiation or carcinogenic substances. These mutations, leading to cellular changes, are likely influenced by genetic factors and are possibly under microenvironmental control	Non-Hodgkin: linked with a many risk factors; most times the causes are unknown. DNA mutations are usually acquired after birth as a result of exposure to radiation, cancer-causing chemicals, or infections, but often these mutations occur for no apparent reason. Hodgkin: not known with certainty. Linked with: infection by Epstein-Barr virus; leading to DNA changes in B lymphocytes→ development of the Reed-Sternberg cell and Hodgkin disease.	Sickle mutat gene f Hemo the lu Red b hemo smoot blood In pec abnor hemo and fc These cells t sickle these causir vital c
Disorder:	**HIV/AIDS**	**Leukemia**	**Lymphoma**	

Diagnosis	When infected, the body starts to produce antibodies. HIV tests look for these antibodies rather than the virus itself. There are many different kinds of HIV tests, including rapid tests and home test kits.	**Blood tests-** to look for abnormal amounts of white blood cells. **Full blood count-** to establish the numbers of different blood cells. **Differential blood count-** % of immature leukemic "blast" cells. Acute leukemia [ALL] or [AML]: too many leukocytes too few erythrocytes/or too few platelets.	Non-Hodgkin: Biopsy of lymphoma; samples and fluids looked at under a microscope to study appearance, size, and shape of the cells and how the cells are arranged. Blood tests to note high levels of lactate dehydrogenase. MRI, ultrasound, PET scan, etc. to look for lymphoma. Hodgkin: biopsy of lymph node; pathology observations to look for Reed-Sternberg cells	Blood hemo blood micro numb In mo the d routir Laurel Andrea Barchas 5/19/10 12:33 PM **Comment:** Can you clarify here
Cells involved	HIV finds and destroys a type of white blood cell (T cells or CD4 cells) that the immune system must have to fight disease.	Low levels of neutrophils, excess numbers of lymphocytes, shortage of blood platelets *acute*: increase of immature blood cells *chronic*: excessive build up of relatively mature, but still abnormal, white blood cells	Starts in lymphoid tissue (lymph or lymphatic tissue). Most lymphomas (85%) start in the B cells. There are also many sub-types and stages of development of B and T cells. Hodgkin: The cancer cells are called *Reed-Sternberg cells*. They are usually an abnormal type of B lymphocyte. They are much larger than normal lymphocytes and also look different from the cells of NH lymphomas and other cancers.	The a the re to bec
Types/variations of the disorder	People with *HIV* have what is called HIV infection. Some of these people will develop AIDS as a result of their HIV infection. *AIDS* (acquired immunodeficiency syndrome). AIDS= final stage of HIV infection. Can take years for a person infected with HIV to reach this stage. Virus has weakened the immune system to the point at which the body has a difficult time fighting an array of infections.	Acute lymphocytic leukemia (ALL), Acute myeloid (myelogenous) leukemia (AML), Childhood Leukemia , Chronic lymphocytic leukemia (CLL), Chronic myelogenous leukemia (CML)	Non-Hodgkin: 1. Diffuse large B-cell lymphoma 2. Follicular lymphoma Hodgkin: 1. Classic HD Nodular sclerosis, mixed cellularity, lymphocyte-rich, or lymphocyte-depleted 2. Nodular lymphocyte predominant HD	A bab disea disor With defec paren get th pass t childr Peopl gene

Treatment options	A panel of leading AIDS specialists has developed recommendations for the use of anti-retroviral medications in people with HIV. This aggressive approach is known as highly active anti-retroviral therapy (HAART). None of these drugs can cure HIV/AIDS, many have side effects that can be severe, and most are expensive. The treatment guidelines also emphasize the importance of quality of life.	Most forms of leukemia are treated with pharmaceutical medications. Some are also treated with radiation therapy. In some cases, a bone marrow transplant can cure the patient. The best source of bone marrow is from healthy, genetically compatible sibling donors. Patients may also receive umbilical cord and peripheral blood transplants (containing hematopoietic stem cells) in addition to bone marrow transplants.	The 2 main methods of treating Hodgkin disease are chemotherapy (the use of cancer-killing drugs) and radiation therapy (the use of high-energy rays or particles). High-dose chemotherapy with stem cell transplants is also an option. There has been much progress in treating non-Hodgkin lymphoma. The treatment options for people with lymphoma depend on the type of lymphoma and its stage, as well as the other prognostic factors of the lymphoma: surgery, radiation, chemotherapy, immunotherapy, and bone marrow/peripheral blood stem cell transplants.	Treati pain r transf hydro tumor the pr a type found hemo "sickl The o diseas transp about sickle match Resea with s